

Annual Lek Survey

Reporting Office: Seney National Wildlife Refuge

Targeted Species: Sharp-tailed Grouse (*Tympanuchus phasianellus*)

JUSTIFICATION AND OBJECTIVES

Nationwide, Sharp-tailed Grouse (sharptail) population trends parallel the declines in openland habitats that have occurred over the last century (Knopf 1996). In Michigan, Seney NWR is an *Important Bird Area* for this species. To address long-term conservation planning concerns in the Upper Peninsula of Michigan, resource managers and researchers have been called upon to promote linkages between disjunct populations of sharptails. Since sharptails in Michigan's Upper Peninsula—including those at Seney NWR—represent the most easterly distribution of the species in the United States, the conservation of these populations may have important genetic consequences (Lesica and Allendorf 1995).

A state-listed species of special concern, the Sharp-tailed Grouse is an area-sensitive flagship species of large openland ecosystem complexes in the eastern Upper Peninsula. As an openland habitat generalist, sharptails can be associated with a number of other openland bird species of considerable conservation concern at the state, regional, or national levels. Because of the relatively wide ecological amplitude of sharptails and their need for large habitat blocks, their conservation has multi-species implications.

Once a premier game bird in the state (Losey et al. 2007), sharptails were once found in both the northern Lower Peninsula and throughout the Upper Peninsula. However, since the early 1950s sharptail numbers, and concomitantly the area in openland land cover types, have been on a steady decline. Presently, sizeable numbers of birds are only found in Alger, Schoolcraft, Luce, Chippewa, and Mackinac Counties in Michigan. The annual lek survey is an attempt to estimate the population size of sharptails in Michigan (Drummer et al. 2011).

Seney NWR has inconsistent data on this species going back to the late 1930s.

STATISTICAL CONSIDERATIONS

These data provide the Michigan DNR an estimate of the distribution and an index of the population size of sharptails in the eastern Upper Peninsula (Drummer et al. 2011).

DATA COLLECTION PROCEDURES

Only the Diversion Farm lek (Schoolcraft Co., T45N-R14W, S.8 NW1/4NE1/4) is consistently surveyed and this is done in conjunction with ongoing efforts to assess inter-observer variation.

Formerly, other surveyed areas included North Bullock (MDNR, Schoolcraft Co., T46N-R14W, S.27, SE1/4NW1/4), South Bullock (MDNR, Schoolcraft Co., T46N-R14W, S.34, NE1/4SW/14), Marsh Creek Pool (Schoolcraft Co., T44N-R14W, S.32, SE1/4NE1/4), some recent leks at C-3 Pool, etc. During the 1930s-1050s, there were leks throughout Units 1-3 at the Refuge.

The following describes existing Michigan Department of Natural Resources sharptail survey protocols (**survey forms should be obtained from Michigan DNR before 1 April**):

- 1) attempt to survey each lek at least twice during the season, at least one week apart;
- 2) conduct surveys when the birds are most active on the leks, usually about 1 April to 15 May;
- 3) the best counts are obtained shortly after dawn, but birds may still be on the dancing grounds until about 1000h;
- 4) avoid doing the survey during periods of persistent rain or wind;
- 5) the best technique is to observe the dancing ground from a distance with binoculars and attempt to count all dancing males. Only the males display, but females may be present. When confident that the males have been counted, approach the dancing ground and count all flushed birds;
- 6) data to be collected include: local lek name (use the historical name for the lek if known), date (dd/mm/yy), time of observation (XXXXh), weather (temperature, wind speed/direction, and sky conditions), number of birds observed (M=number of males, F=number of females, ?=number of unidentified birds, add all birds sighted and enter in total column), location (write in county on the upper line, record legal Town, Range, Section, and ``40'' below; for example: Luce; T47N, R10W, Sec. 31, SENW), comments, and observer name(s).

DATA ANALYSIS AND REPORTING

Data forms are supplied on a yearly basis by the Michigan DNR. Completed forms are returned to Michigan DNR.

MANAGEMENT ACTION THRESHOLDS

None required.

DATA STORAGE PROCEDURES

A database (Excel file) should be kept and updated at the refuge each year, with a master file managed by the Michigan DNR, Wildlife Division.

SPECIAL CONSIDERATION

None required.

LITERATURE USED

Applegate, R. D. 2000. Use and misuse of prairie chicken lek surveys. *Wildlife Society Bulletin* 28: 457-463.

Drummer, T.D., Corace, R.G. III and S.J. Sjogren. 2011. Sharp-tailed Grouse lek attendance and fidelity in Upper Michigan. *The Journal of Wildlife Management* 75:311-318.

Knopf, F. L. 1996. Prairie legacies: birds. In: F. B. Samson and F. L. Knopf, editors. *Prairie Conservation*. Island Press, Washington, D. C.

Lesica, P. and F.W. Allendorf. 1995. When are peripheral populations valuable for conservation? *Conservation Biology* 9: 753-760.

Losey, E.B., Deemer, B.R. and R.G Corace III. 2007. History of sharp-tailed grouse (*Tympanuchus phasianellus*) at Seney National Wildlife Refuge and surrounding areas, Schoolcraft County, Michigan. *The Passenger Pigeon* 69:359-348.

EFFORT AND COSTS

This survey is primarily done by volunteers as an outreach and education program done by the Visitor Services Program. Surveys, reporting, and preparation time for Applied Science Program staff takes approximately 5 hr per year (this does not include Visitor Services and volunteer time). Fuel costs are covered by the volunteers.